PROGRAMMABLE SERIES MOTOR CONTROLLERS

MODELS 1204M / 1205M / 1209M / 1221M

CURTIS

DESCRIPTION

Curtis Models 1204M/1205M/1209M/1221M provide fully programmable control of DC series motors performing on-vehicle traction or pump duties. These microprocessor-based MOSFET controllers add flexibility and versatility to the time-proven Curtis series motor controller family.

APPLICATION

Primarily designed for battery-powered vehicle applications using either electric or hydrostatic traction. These include industrial trucks, personnel carriers, mobile elevating work platforms, and golf and utility vehicles.

FEATURES

Controllable Power

- Pulse Width Modulation (PWM) control with programmable speed, acceleration rate, and current limit.
- Short duration boost capability (5 sec, 110% of 2 min current rating). Allows clearing of obstacles, climbing ramps.
- High efficiency, silent operation. Costs, heat-sinking requirements, motor and battery losses reduced. Low-end torque, range, and battery life maximized.

Programmable and Flexible

- Fully programmable via Curtis hand-held tools or Curtis PC programming software model kits 1314K.
- Supports multiple throttle types and high pedal disable (HPD) options.
- LED output for easy system troubleshooting via flash codes.
- Fully programmable analog throttle input for precise speed control with a variety of signal sources.
- Programmable under voltage cutback caters for different battery types.
- Programmable, variable, or fixed plug braking modes.
- Plug braking diode internal to controller.
- Models available without A2 busbar for applications such as pump control that do not require plug braking.

FEATURES cont'd

Robust Safety and Reliability

- Redundant hardware and software watchdog timers.
- MOSFET short-circuit protection functions.
- Programmable High Pedal Disable function prevents controller operation if throttle is applied before key is turned on.
- Contactor fault detection: controller shuts down safely if the main contactor opens.
- Contactor protection functions minimize high current arcing to prevent contact pitting and thus prevent contactor weld failures.
- PWM frequency shifts from 15.6kHz to 1kHz in high temperature of controller, providing audible warning of thermal cutback.
- Under voltage cutback and shutdown functions protect against low battery voltage, including low voltage caused by external loads.
- Electrical isolation to heat sink: 500VAC(≤48V);1000VAC (›48V).

Compliance

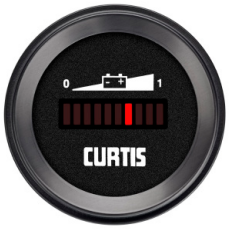
- EMC: Designed to the requirements of EN12895.
- Package environmental rating: IP54.
- Certified to UL 583.
- Regulatory compliance of the complete vehicle system with the controller installed is the responsibility of the vehicle OEM.

MODEL CHART

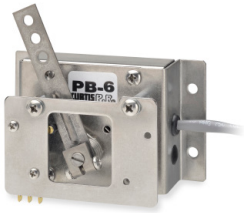
Model No.	Voltage (V)	Current Limit (A)		
		5 Sec Boost	2 Min	1 Hour
1204M–42xx	24 / 36	303	275	125
1204M-53xx*	36 / 48	358	325	140
1204M–63xx*	48 / 72	358	325	140
1205M–46xx	24 / 36	550	500 (30 Sec)	175
1205M–56xx*	36 / 48	550	500 (1 Min)	200
1205M—6B4xx	60 / 72	440	400 (1 Min)	175
1209M–55xx	36 / 48	495	450	200
1209M–64xx	48 / 72	440	400	175
1221M–67xx	48 / 72	605	550	225

NOTE: Boost rating dependant on programmed current limit max value. Values shown assume max current limit setting.
*UL583 certification pending

SYSTEM ACCESSORIES



Curtis Model 906 is an inexpensive, one piece, easy to install battery fuel gauge that provides a reliable, accurate, and easy to read display of battery state-of-charge.

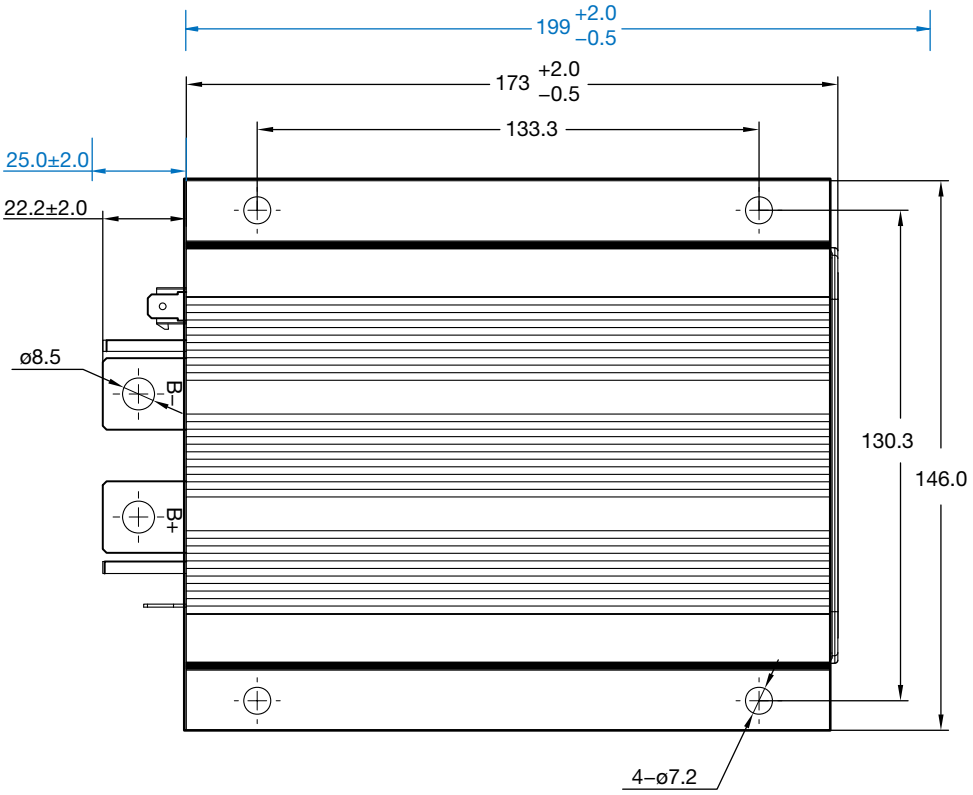


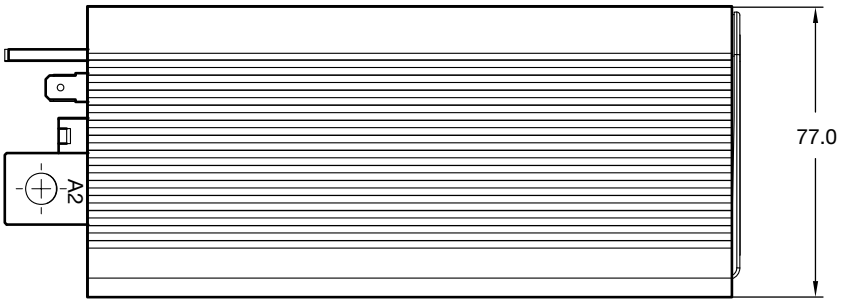
The Curtis Pot Box is a building block for a vehicle throttle. Attached to a lever arm, the pot box provides the controller with a proportional resistance to indicate the desired speed.

The Curtis Model 1313 Handheld Programmer is ideal for setting parameters and performing diagnostic functions.

DIMENSIONS mm

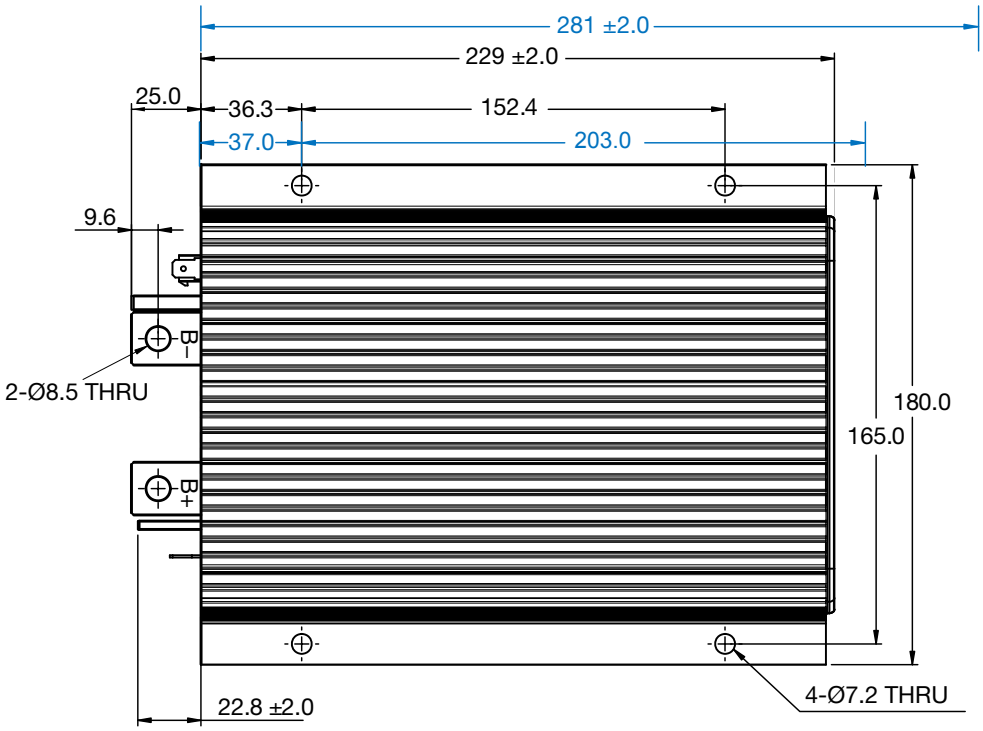
Model 1204M and Model 1205M *(1205M dimensions same as 1204M except for those shown in blue)*

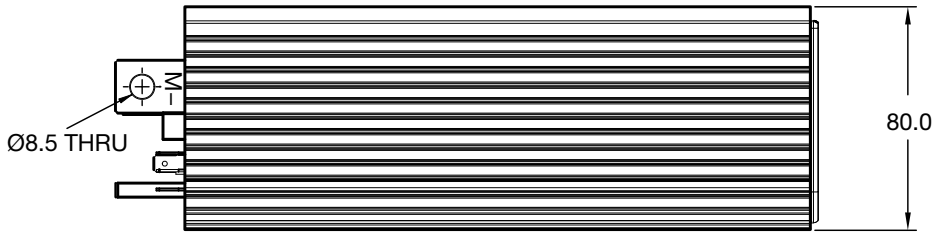




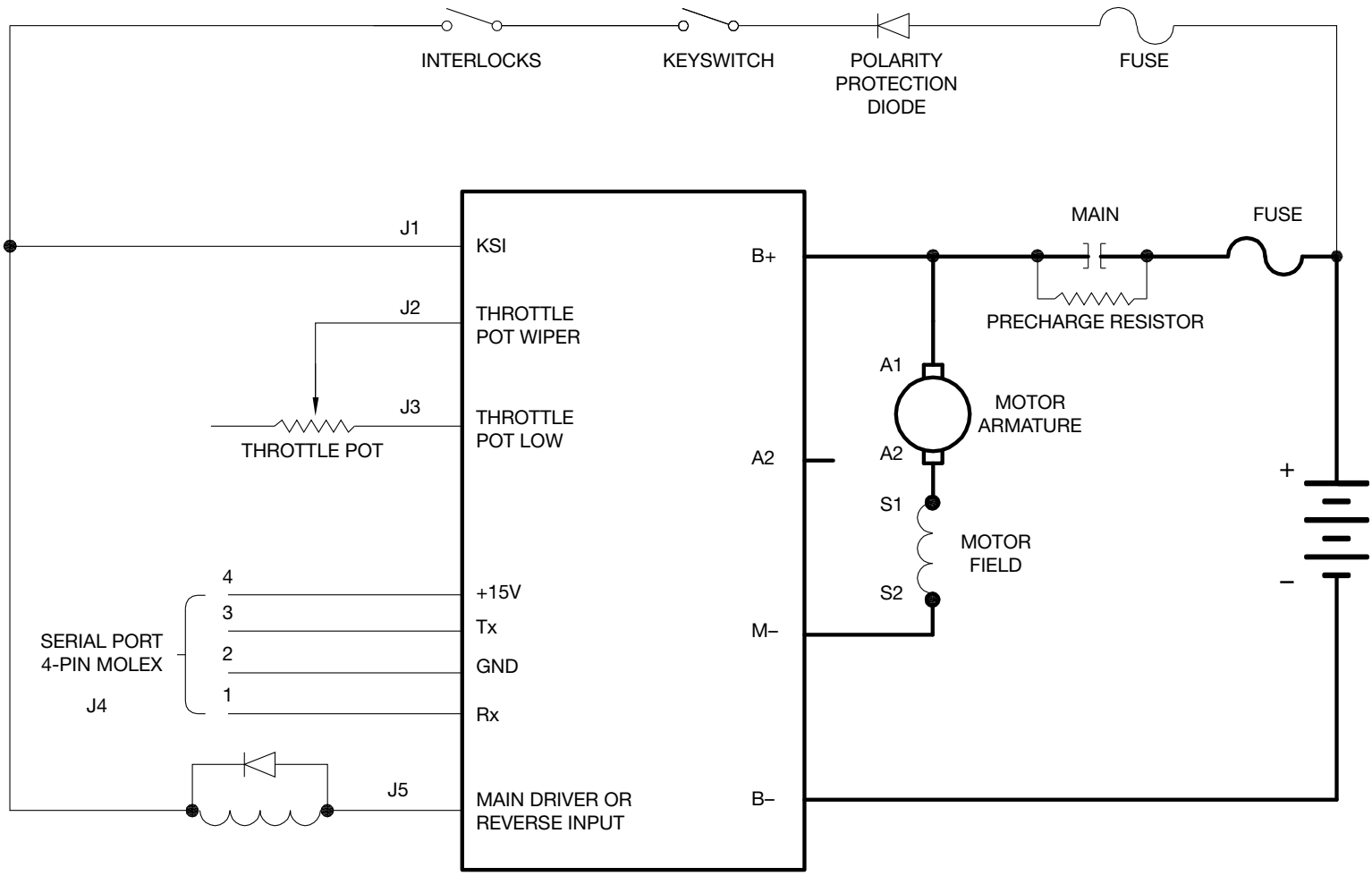
DIMENSIONS mm

Model 1209M and Model 1221M *(1221M dimensions same as 1209M except for those shown in blue)*

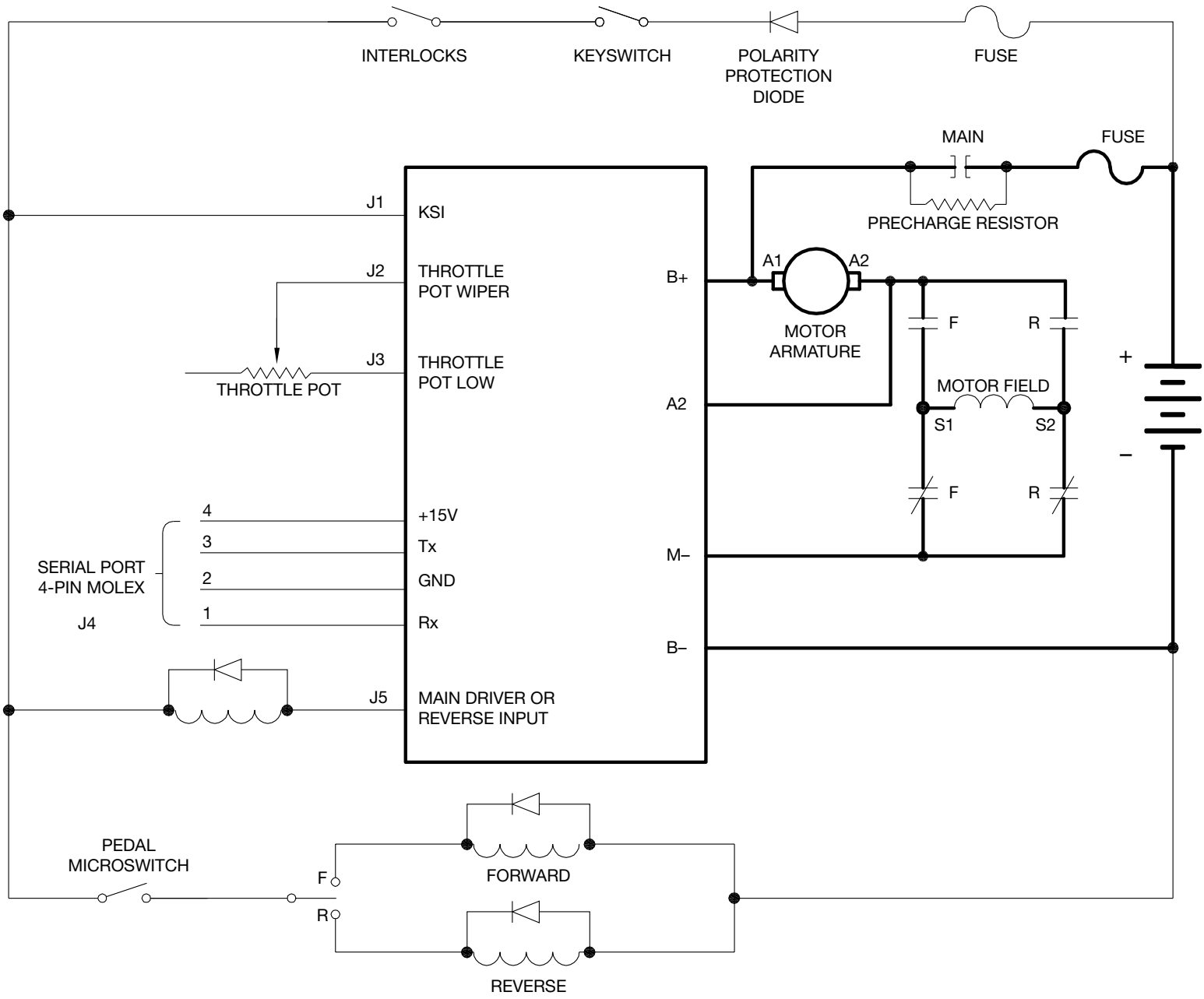




TYPICAL WIRING – PUMP



TYPICAL WIRING – TRACTION



WARRANTY Two year limited warranty from time of delivery.

The Curtis Difference
You feel it when you drive it

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